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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,982	02/10/2004	Jose A. Blakeley	MSFT-3027	1307
41505 7590 02/28/2007 WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION) CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER MORRISON, JAY A	
			ART UNIT 2168	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			02/28/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/775,982

Applicant(s)

BLAKELEY ET AL.

Examiner

Jay A. Morrison

Art Unit

2168

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Remarks*

1. Claims 1-27 are pending.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims do not recite a practical application by producing a physical transformation or producing a useful, concrete, and tangible result. To perform a physical transformation, the claimed invention must transform an article or physical object into a different state or thing. Transformation of data is not a physical transformation. A useful, concrete, and tangible result must be either specifically recited in the claim or flow inherently therefrom. To be useful the claimed invention must establish a specific, substantial, and credible utility. To be concrete the claimed invention must be able to produce the same results given the same initial starting conditions. To be tangible the claimed invention must produce a practical application or real world result. In this case the claims fail to perform a physical transformation because the claims are directed to operating on data. The claims are useful and concrete, but they fail to produce a tangible result because no result is stored in a non-volatile medium nor, for example, reported to a user.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1-4,8-9,12-17,21-22,25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Schallehn et al. ('Schallehn' hereinafter) "Advanced Grouping and Aggregation for Data Integration", by Schellehn, E., Kai-Uwe, S., and Saake, G., Conference on Information and Knowledge Management archive, Proceedings of the tenth international conference on Information and knowledge management, Atlanta, Georgia, USA, Pages: 547 - 549, Year: 2001, ISBN:1-58113-436-3).

As per claim 1, Schallehn teaches

A method for allowing users to define new aggregates in a database system, comprising: (see abstract)

receiving code that implements a class defining the structure of a user-defined aggregate and methods (interface, page 548, column 2, paragraphs 4-6)

that can be invoked on instances of the user-defined aggregate; ('can be' denotes an optionally recited limitation and optionally recited limitations are not

guaranteed to take place and are therefore not required to be taught, see MPEP § 2106  
Section II(C))

and enforcing a contract against the class so that the code, when executed at runtime, satisfies requirements of the contract to ensure desired execution thereof, the contract requiring that the class comprise a first method (interface, page 548, column 2, paragraphs 4-6)

that is invoked to initialize the computation of an instance of the user-defined aggregate, (init() in interface UDG, page 548, second column, 4-5 paragraph)

a second method (interface, page 548, column 2, paragraphs 4-6)

that is invoked to accumulate a plurality of values to be aggregated, (aggregation in UDG, page 548, second column 4-5 paragraph)

and a third method (interface, page 548, column 2, paragraphs 4-6)

that is invoked to compute a final result of the instance of the user-defined aggregate. (finish() in interface UDG, page 548, second column 4-5 paragraphs)

As per claim 2,

the contract further comprises a requirement that the class specify one of a plurality of different formats (page 549, paragraphs 1-4)

for persisting instances of the user-defined aggregate in a database store. ('for' indicates intended use; Minton v. Nat'l Ass'n of Securities Dealers, Inc., 336 F.3d 1373, 1381, 67 USPQ2d 1614, 1620 (Fed. Cir. 2003) "whereby clause in a method claim is not given weight when it simply expresses the intended result of a process step

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positively recited.” Examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are: (A) “adapted to” or “adapted for ” clauses; (B) “wherein” clauses; and (C) “whereby” clauses. Therefore intended use limitations are not required to be taught, see MPEP § 2106 Section II(C), MPEP 2111.04 [R-3])

As per claim 3,

the contract further comprises a requirement that the class comprise a fourth method (page 548, column 2, paragraphs 4-6)

that is invoked to merge an instance of the user-defined aggregate with another partial aggregation. (aggregation in UDG, page 548, second column 4-5 paragraph)

As per claim 4,

the contract further comprises a requirement that the class comprise a public constructor having no arguments. (page 548, column 2, paragraphs 2-4)

As per claim 8,

the code that implements the class comprises managed code. (java, page 548, column 2, second paragraph)

As per claim 9,

receiving a query that requires evaluation of the user-defined aggregate over a group of elements; (page 549, first column, paragraphs 1-3)

instantiating an instance of the class that defines the structure of the user-defined aggregate; (page 549, first column, paragraphs 1-3)

invoking said first method to initializing the instance of the user-defined aggregate; (page 549, first column, paragraphs 1-3)

for each element of the group, invoking said second method on the instance of the user-defined aggregate to accumulate each element; (page 549, first column, paragraphs 1-3)

and invoking said fourth method to return a value of the user-defined aggregate. (page 549, first column, paragraphs 1-3)

As per claim 12,

the class defining the user-defined aggregate further comprises one of: an attribute that indicates whether the user-defined aggregate is invariant to duplicates; (page 548, column 2; paragraphs 4-6)

an attribute that indicates whether the user-defined aggregate is invariant to NULL values; (page 548, column 2, paragraphs 4-6)

an attribute that indicates whether the user-defined aggregate is invariant to order; (page 548, column 2, paragraphs 4-6)

and an attribute that indicates whether the user-defined aggregate returns NULL if the group on which the user-defined aggregate is to be computed is empty. (page 548, column 2, paragraphs 4-6)

As per claim 13,  
determining a method of computation of an instance of the user-defined aggregate based at least in part upon a value of said one of said attributes. (page 549, first column, paragraphs 1-3)

As per claims 14-17,21-22,25-26,  
These claims are rejected on grounds corresponding to the arguments given above for rejected claims 1-4,8-9,12-13, respectively, and are similarly rejected.

As per claim 27, Schallehn teaches  
A computer-readable medium having program code stored thereon for allowing users to define new aggregates in a database system, the program code, when executed by a computer, causing the computer to perform the method recited in claim 1.  
(see abstract)

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schallehn et al. ('Schallehn' hereinafter) "Advanced Grouping and Aggregation for Data Integration", by Schellehn, E., Kai-Uwe, S., and Saake, G., Conference on Information and Knowledge Management archive, Proceedings of the tenth international conference on Information and knowledge management, Atlanta, Georgia, USA, Pages: 547 - 549, Year: 2001, ISBN:1-58113-436-3) in view of Kriens et al. ('Kriens' hereinafter) (Patent Number 5,864,862).

As per claim 5,

Schallehn does not explicitly indicate "storing metadata about the user-defined aggregate".

However, Kriens discloses "storing metadata about the user-defined aggregate" (column 22, lines 21-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schallehn and Kriens because using the steps of "storing metadata about the user-defined aggregate" would have given those skilled in the art the tools to improve the invention by allowing their own structure to be reflected on during run-time. This gives the user the advantage of have meta-information about objects available at run-time.

"for subsequent use by the database system in creating instances of the user-defined aggregate". ('for' indicates intended use; *Minton v. Nat 'l Ass 'n of Securities Dealers, Inc.*, 336 F.3d 1373, 1381, 67 USPQ2d 1614, 1620 (Fed. Cir. 2003) "whereby clause in a method claim is not given weight when it simply expresses the intended result of a process step positively recited." Examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are: (A) "adapted to" or "adapted for" clauses; (B) "wherein" clauses; and (C) "whereby" clauses. Therefore intended use limitations are not required to be taught, see MPEP § 2106 Section II(C), MPEP 2111.04 [R-3])

As per claim 18,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 5 and is similarly rejected.

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8. Claims 6-7,10-11,19-20,23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schallehn et al. ('Schallehn' hereinafter) "Advanced Grouping and Aggregation for Data Integration", by Schellehn, E., Kai-Uwe, S., and Saake, G., Conference on Information and Knowledge Management archive, Proceedings of the tenth international conference on Information and knowledge management, Atlanta, Georgia, USA, Pages: 547 - 549, Year: 2001, ISBN:1-58113-436-3) in view of Berg ("How Do I Create Persistent Java Objects", Dr. Dobbs Journal, April 1997, pages 98-101).

As per claim 6, Schallehn teaches  
the plurality of different formats (page 549, paragraphs 1-4)  
for persisting instances of the user-defined aggregate ('for' indicates intended use; Minton v. Nat 'l Ass 'n of Securities Dealers, Inc., 336 F.3d 1373, 1381, 67 USPQ2d 1614, 1620 (Fed. Cir. 2003) "whereby clause in a method claim is not given weight when it simply expresses the intended result of a process step positively recited." Examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are: (A) "adapted to" or "adapted for " clauses; (B) "wherein" clauses; and (C) "whereby" clauses. Therefore intended use limitations are not required to be taught, see MPEP § 2106 Section II(C), MPEP 2111.04 [R-3])

Schallehn does not explicitly indicate "comprises: a first format in which an instance of the user-defined aggregate is automatically serialized in accordance with a

native format of the database system; and a second format in which an instance of the user-defined aggregate is serialized in a manner defined by the class.”

However, Berg discloses “comprises: a first format in which an instance of the user-defined aggregate is automatically serialized in accordance with a native format of the database system; and a second format in which an instance of the user-defined aggregate is serialized in a manner defined by the class” (page 98, second column, second paragraph through the third column, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schallehn and Berg because using the steps of “comprises: a first format in which an instance of the user-defined aggregate is automatically serialized in accordance with a native format of the database system; and a second format in which an instance of the user-defined aggregate is serialized in a manner defined by the class” would have given those skilled in the art the tools to improve the invention by allowing the database to persist the data. This gives the user the advantage of not having to generate the data each time it is required.

As per claim 7,

Schallehn does not explicitly indicate “the plurality of different formats for persisting instances of the user-defined aggregate further comprises a third format in which an instance of the user-defined aggregate is serialized in accordance with a method provided by a managed code programming module.”

However, Berg discloses "the plurality of different formats for persisting instances of the user-defined aggregate further comprises a third format in which an instance of the user-defined aggregate is serialized in accordance with a method provided by a managed code programming module" (JDK, page 98, second column, third paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schallehn and Berg because using the steps of "the plurality of different formats for persisting instances of the user-defined aggregate further comprises a third format in which an instance of the user-defined aggregate is serialized in accordance with a method provided by a managed code programming module" would have given those skilled in the art the tools to improve the invention by allowing the database to persist the data. This gives the user the advantage of not having to generate the data each time it is required.

As per claim 10,

Schallehn does not explicitly indicate "deserializing the instance of the user-defined aggregate prior to invoking said second method for an element of the group and then serializing the instance after invoking said second method for the element."

However, Berg discloses "deserializing the instance of the user-defined aggregate prior to invoking said second method for an element of the group and then serializing the instance after invoking said second method for the element" (page 98, second column, second paragraph through the third column, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schallehn and Berg because using the steps of "deserializing the instance of the user-defined aggregate prior to invoking said second method for an element of the group and then serializing the instance after invoking said second method for the element" would have given those skilled in the art the tools to improve the invention by allowing the database to persist the data. This gives the user the advantage of not having to generate the data each time it is required.

As per claim 11,

Schallehn does not explicitly indicate "deserializing the instance of the user-defined aggregate prior to invoking said second method for a first element of the group; caching the deserialized instance of the user-defined aggregate; for each element of the group, invoking said second method on the cached instance of the user-defined type; and, thereafter, serializing the cached instance of the user-defined type."

However, Berg discloses "deserializing the instance of the user-defined aggregate prior to invoking said second method for a first element of the group; caching the deserialized instance of the user-defined aggregate; for each element of the group, invoking said second method on the cached instance of the user-defined type; and, thereafter, serializing the cached instance of the user-defined type" (page 98, second column, second paragraph through the third column, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schallehn and Berg because using the steps of

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“deserializing the instance of the user-defined aggregate prior to invoking said second method for a first element of the group; caching the deserialized instance of the user-defined aggregate; for each element of the group, invoking said second method on the cached instance of the user-defined type; and, thereafter, serializing the cached instance of the user-defined type” would have given those skilled in the art the tools to improve the invention by allowing the database to persist the data. This gives the user the advantage of not having to generate the data each time it is required.

As per claims 19-20,23-24

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 6-7,10-11, respectively, and are similarly rejected.

### ***Response to Arguments***

9. Applicant's arguments filed 1/8/2007 have been fully considered but they are not persuasive.

With respect the 35 U.S.C. 101 rejections, the Applicant submits that the claimed invention does produce a useful, concrete, and tangible result because enforcing a contact against a class is used in an object oriented programming environment to check that the code satisfied certain pre-conditions and requirements to execute properly, it is respectfully noted that while it is useful it still is not guaranteed to produce a concrete and tangible result and is therefore not statutory.

With regards to Applicant's argument that neither Schallehn, Kriens, nor Berg disclose the specific contract enforced against the code, it is noted that Schallehn discloses an interface (UDG, page 548, second column, third paragraph), which has in its contract methods which define the aggregation methods as claimed (page 548, second column, 4-5 paragraph). Therefore it is respectfully submitted that Schallehn discloses the limitation.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TIM VO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

Jay Morrison  
TC2100



Tim Vo  
TC2100